

REMARKS

Claim Objections

Claims 17 and 29 have been amended to overcome the informality objections.

Japan '207

Claims 17-18, 20, 23, 25, 26, 27, 29, 30 and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Japan '207 (JP 6-135207). This rejection is traversed on the basis that the claimed invention is to a tread having a center tread element row wherein the tread elements are distinct in size, shape or orientation relative to adjacent tread elements; each array having sides that are inclined between first and second array ends and which widen continuously from the first and second array ends to a relatively wider array portion midsection (independent claims 17, 29 and claims dependent therefrom). The arrays overlap wherein the upper and lower ends are circumferentially opposite a midsection of the elongate sides of upper and lower adjacent arrays, respectively (independent claim 17 and its dependent claims).

As a result of the claimed invention limitations, each tread array is composed of distinctly different tread elements. Moreover, each array is configured having narrower ends that widen continuously into a wider midsection. The irregularities resulting from such a configuration aid in noise reduction as well as providing a wider tread array portion at the equatorial plane of the tread.

The cited references individually and collectively fail to teach such a structure. Japan '207 teaches an array in which the sides of the array do not widen continuously from narrower ends to a wider midsection. The midsection M (see attached drawing – Attachment A) of Japan '207 is not wider than the end portion E. Thus, the array of Japan '207 does not widen continuously from narrower ends to a wider midsection but rather steps inward at instep I so that the midsection of the array is narrower than adjacent array end portions. Consequently,

the ends of each array are not opposite a wider midsection of neighboring arrays above and below, but are adjacent and opposite a narrower midsection of such neighboring arrays.

Thus, the cited reference fails to teach an array having irregular width from narrower ends to a wider midsection. See attached schematic of Japan '207 marked to correlate with Applicants' comments above.

Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japan '207. For the reasons set forth above as regards independent claim 17, dependent claims 21 and 22 are considered patentably distinct over the cited reference as well as the following additional reasons. There is further no teaching or suggestion in the cited reference Japan '207 for the concept of incorporating tread elements in the numerical magnitude claimed. The reference teaches using fewer tread elements and thus lacks the degree of tread element differentiation as present in the subject invention that claims adjacent tread elements as being distinctive in size, shape or orientation. The Examiner has pointed to no teaching in the reference that supports using tread elements in higher numbers.

Linder et al

Claims 17-20, 23, 27 and 29-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Linder et al (US 4,545,415). The rejection is traversed for the reasons that Linder teaches an array that does not widen continuously from narrower ends to a relatively wider medial array portion. The Linder ends merge into an intermediate neck N that is of constant width and the Linder sides therefore cannot be deemed to be continuously widen. Moreover, the sides of Linder is reversely inclined at portion P proximate array ends (see the Linder Fig. 2) and cannot, therefore, be deemed to extend at an angled incline end to end. Thus, Linder does not teach array sides, or boundary grooves, that extend at an angled incline from a lower end to an upper end on the opposite side of the centerplane.

Still further the arrays of Linder are not overlapped in a mutual orientation such that

the upper and lower ends of each array are located circumferentially opposite a midsection of the elongate sides of upper and lower adjacent arrays, respectively. The Linder array end E1 does not intersect the midsection of the array above but rather extends beyond the midsection and aligns along line L (See attached Linder Fig. 2 – Attachment B) with the array end E2. Applicants thus disagree that Linder arrays overlap in the manner claimed since the Linder midsections and ends of the arrays align circumferentially and the ends of each array are not opposite the midsection of arrays above and below. Therefore, Linder fails in multiple respects in meeting the limitations of independent claims 17 and 29 and cannot provide a proper basis of rejection under 35 U.S.C. 102(b).

Claims 18, 19 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lindner et al. This rejection is likewise traversed. The Lindner arrays do not meet the limitations of the claims because of the reasons set forth above. Modification of the boundary grooves of Lindner in the manner the Examiner proposes in order to re-align Lindner arrays is neither suggested nor obvious from the Lindner disclosure itself. Nothing in the reference supports such a modification. The Lindner reference, to the contrary, discloses an array having ends that extend in opposite directions to the direction of incline of the array midportion. The boundary grooves between adjacent sides of adjacent arrays (that are claimed in claims 17 and 29 to incline end to end across the centerplane of the tread) must likewise incline end to end. The Lindner reference grooves, however, do not incline from shoulder row to shoulder row but undergo the same change in direction as the ends of the Lindner arrays undergo. In other words, the Lindner boundary grooves incline along a midsection but decline at array ends. See attached schematic of Linder et al. view marked to correlate in reference to Applicants' comments above.

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lindner et al in view of Campos et al (US4,598,748). The addition of Campos does not remedy the

fundamental deficiencies in Lindner set forth above. The use of three pitch lengths in a staggered overlapping array tread pattern as set forth in claim 17 is neither taught nor suggested by either Lindner or Campos. Campos does not address a tread array composed of tread elements that are distinct in size, shape or orientation relative to adjacent tread elements. While Campos teaches a pattern that repeats along the circumference of the tire, the tread arrays are configured pursuant to the pending claims. There would be, therefore, no instruction to one skilled in the art from a combined consideration of Lindner and Campos as to how to incorporate three or more pitch lengths arranged in a noise reducing sequence and each array (configured as set forth in the claims) extending circumferentially across at least one or more pitches. Claim 24 is accordingly considered patentable over the cited art whether considered singularly or in combination.

Fontaine et al

Claims 17-18, 20, 23, 25, 27 and 29-31 are rejected under 35 U.S.C. 102(a) as being anticipated by Fontaine et al (US 4,424,843). Fontaine teaches a tread array that includes non-tapered opposite ends E. The Examiner has provided no detailed application of the claim language to FIG. 3 of Fontaine et al with which to analyze the basis for rejection under 35 U.S.C. 102(b). Applicants maintain, however, that Fontaine neither teaches nor suggests an array configured pursuant to the claims. If the Examiner is relying upon end point P as a tapered end, it cannot be said that the sides of the Fontaine array widen continuously from point P because sides of the array start to converge at angle A. Applicants submit that is side E that represents the end of the Fontaine array, and side E is enlarged not tapered and is wider (contrary to the claimed invention) than midsection M crossing the centerplane. The ends of Fontaine arrays further are not located circumferentially opposite the midsection M of an adjacent array. Thus, Applicants maintain that the arrays of Fontaine are not overlapping as set forth and claimed in the application. Furthermore, each array of Fontaine does not widen

continuously from first and second ends to a relatively wider medial array portion but rather narrows toward narrower midsection M.

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fontaine et al. For the reasons set forth above, Applicants consider Fontaine to be insufficient in setting forth a tread array configured according to the invention under either 35 U.S.C 102 or 103.. There is no teaching or suggestion in Fontaine that would instruct one skilled in the art to modify Fontaine into the claimed invention. The inclination angle specified in claim 26 is relative to an array of construction and configuration set forth in claim 17. In no manner does the array of Fontaine meet the claim limitations of independent claim 17 regarding the configuration of the tread array in which ends of each array are located circumferentially opposite a midsection of the elongate sides of upper and lower adjacent arrays. See attached schematic of Fontaine view marked in reference to Applicants' comments above (Attachment C).

Claims 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fontaine et al in view of Campos et al (US 4,598,748). Applicants traverse the rejection for the reasons set forth above in regard to Fontaine et al not teaching or suggesting the claimed array configuration. There is further no teaching or suggestion in either Fontaine or Campos that would lead one skilled in the art to first make the alterations and modifications to Fontaine necessary in deriving the claimed array configuration and then incorporating a Campos pitch combination into such an array configuration. The Examiner has not produced a sufficient prior art basis with which to establish a prima facie case that the invention would be obvious to one skilled in the art.

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fontaine et al in view of Japan '607 (JP 4-193607). Applicants traverse the rejection for the reasons set forth above in regard to Fontaine et al not teaching or suggesting the claimed array

configuration. There is further no teaching or suggestion in either Fontaine or Japan '607 that would lead one skilled in the art to first make the alterations and modifications to Fontaine by increasing the number of shoulder row blocks necessary to derive the claimed array configuration and then incorporating an asymmetric and differentiated block configuration into such an array configuration. The Examiner has not produced a sufficient prior art basis with which to establish a prima facie case that the invention would be obvious to one skilled in the art. Japan '607, in fact teaches block elements configured away from the invention in that the central Japan '607 blocks have a common parallelogram configuration that are not distinct in size, shape or orientation relative to adjacent tread elements. Only through improper hindsight using the subject disclosure would one skilled in the art be instructed to ignore the differences between Japan '607 and the claimed invention central row blocks.

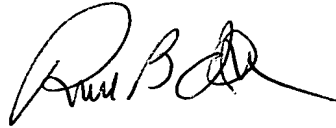
The Examiner has taken the position in the Remarks section of the Office Action that Japan '207 center arrays overlap as claimed in the pending claims. Applicants disagree. From the attached view from Japan '207, it is seen that the lower point end of a block 121E is not opposite a midsection of the elongate sides of upper and lower adjacent arrays as "midsection" is defined in the claims. The "midsection" of each array is between the ends of the array and crosses the centerplane. To the contrary, each block 121 E aligns circumferentially with a block 121 E of an array above and below. Stated differently, were one to draw a circumferential line (C as marked in the attached FIG. of Japan '207 through the end of the array at the (radially outer edge of block 121E), it would clearly not intersect a wider array midsection of an underlying array that crosses the centerplane. In fact, as explained above, the midsection M of Japan '207 is narrower not wider as it crosses the centerplane relative to the array ends, and fails to meet the claim limitations for that reason as well. The Examiner has stated that the Japan '207 block 121 A is adjacent a block 121D of another array, and characterizes block 121D as a middle block. However, the claims state

that the end of each array is *circumferentially opposite* a relatively wider midsection of an adjacent array which crosses the centerplane. Block 121 A is radially adjacent a block 121 D of another array, but is clearly not circumferentially opposite. Moreover, block 121 D of each array of Japan '207 is clearly not wider than block 121A and therefore cannot be considered to be part of a wider midsection crossing the centerplane.

The Examiner is further incorrect in stating that the boundary grooves of Japan '207 converge toward the ends. See the instep I in the attached depiction of Japan '207 at which point the array narrows. Thus, the array sides in Japan'207 do not widen continuously from tip to a wider midsection that crosses the centerplane.

For the reasons set forth above, Applicants submit that claims 17-32 are patentably distinct over the cited art whether considered singularly or in combination.

Respectfully submitted,



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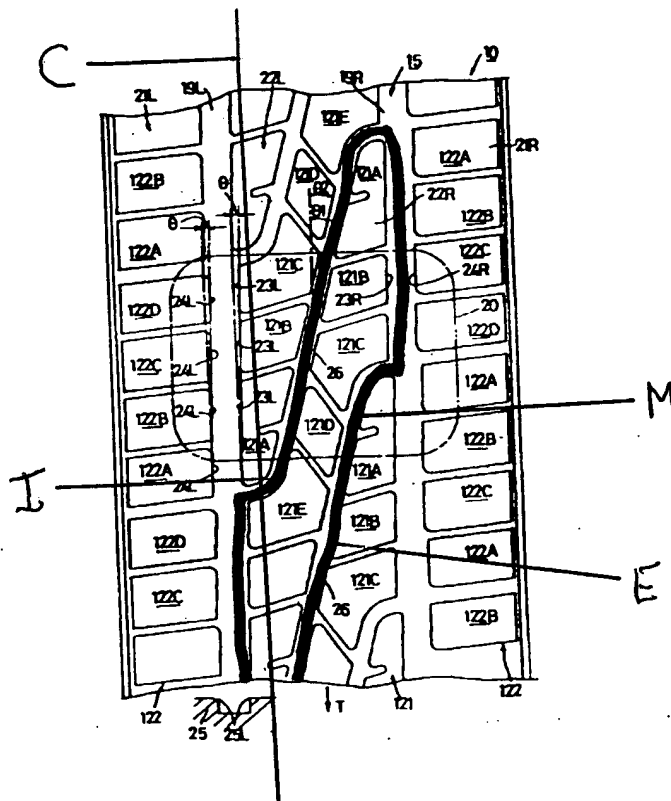
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(54)【発明の名称】 空気入りラジアルタイヤ

(57)【要約】

【目的】 高速走行してもウェット性能とドライ性能にすぐれた空気入りラジアルタイヤを提供する。

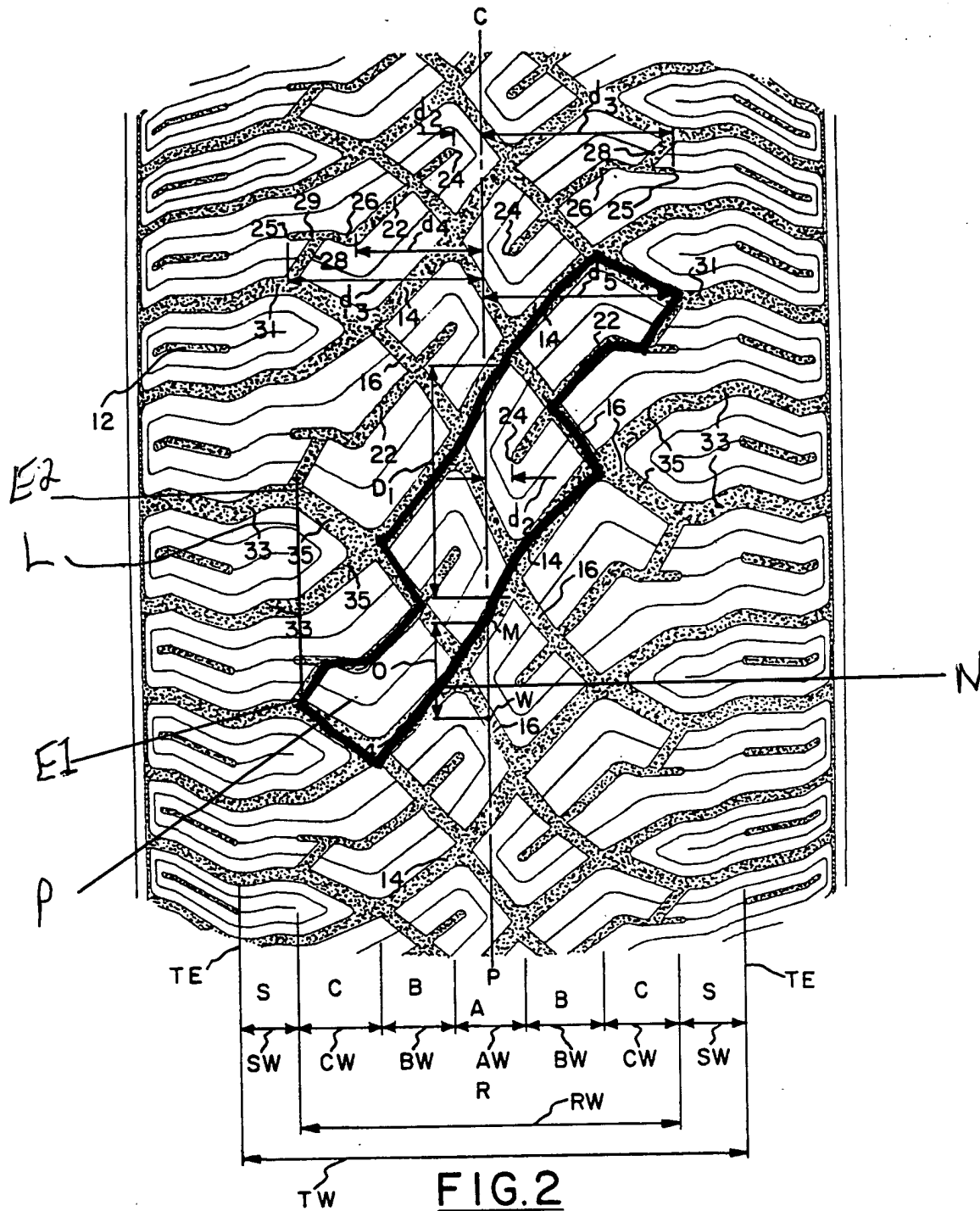
【構成】 ブロックパターンの特レッド部15の左右に、実質的に周方向に連続するストレート溝19L, 19Rを有する空気入りラジアルタイヤ10である。特レッド部15の実接地面20における左右のストレート溝19L, 19Rは、周方向に配列した複数ブロック21L, 21R, 22L, 22Rの左右組のエッジ23L, 23R, 24L, 24Rからなり、レイングループ路面25のエッジ25L, 25Rに対して左右組のエッジ23L, 23R, 24L, 24Rのうち一組のエッジ23L, 23Rが適合し、他の組のエッジ23L, 23Rはタイヤ軸方向に位相がずらされている。



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4,545,415



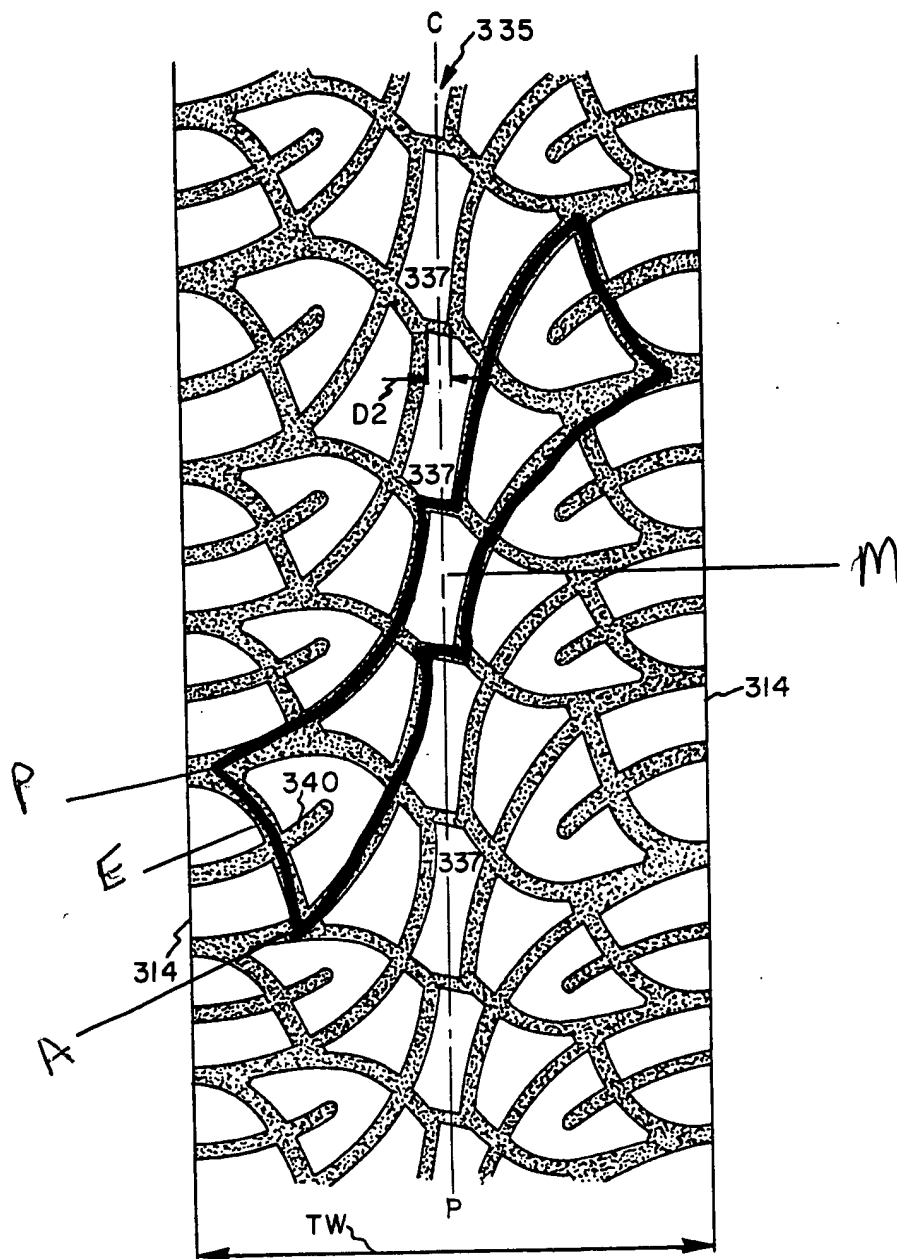


FIG. 3